WHAT IS CLAIMED IS:

1. A injection mold assembly, comprising:

a cavity section having a first portion and a second portion, the first portion comprising a hardened material that defines a cavity contact surface, the second portion comprising a high heat transfer material and defining a cavity mold surface;

a core section having at least a core contact surface and a core mold surface, a portion of the core section forming the core contact surface comprising a hardened material; and

a mold cavity having a distal and a proximal end and formed by the cavity mold surface and the core mold surface when a portion of the cavity contact surface and a portion of the core contact surface are in contact, the distal end of the mold cavity formed by the second portion of the cavity section.

2. The injection mold assembly of Claim 1, wherein the second portion comprises a high heat transfer material and defines a significant portion of the cavity mold surface.

3. The injection mold assembly of Claim 1, wherein the first portion of the cavity section forming the cavity contact surface is a threaded finish portion having a lower rate of heat transfer than the second portion of the cavity section.

4. The injection mold assembly of Claim 1, wherein the first portion of the cavity section forming the contact surface is formed of steel and the second portion is formed of beryllium coated with a hardened metal.

5. The injection mold assembly of Claim 1, wherein the core section comprises a elongated core having an upper core portion and a tip, the upper core portion forms a substantial portion of the core and the tip has a greater rate of heat transfer than the upper portion.

6. The injection mold assembly of Claim 5, wherein the upper core portion and the tip are configured to mate to form the core mold surface, wherein the core mold surface is substantially smooth.

7. The injection mold assembly of Claim 6, wherein the upper core portion and the tip have a cylindrical flange, and the flanges configured to mate each other.

8. The injection mold assembly of Claim 7, further comprising solder that couples the tip to the upper core portion.

9. The injection mold assembly of Claim 1, wherein the core section comprises a high heat transfer portion disposed adjacent to the distal end of the mold cavity, the high heat transfer portion comprising a material having a greater rate of heat transfer than the **[[a]]** portion of the core section adjacent to the proximal end of the mold cavity.

10. An injection mold assembly, comprising:

a mold cavity having an internal surface and an external surface, the external surface having a region configured to surround a gate;

a core section comprising a core member and a core holder, the core holder holding the core member, which defines at least a portion of the internal surface of the mold cavity;

a cavity section comprising an upper hardened portion and a gate portion, the upper hardened portion forming a lower contact surface and comprising a hardened material, and the gate portion comprising a high heat transfer material forming the region of the external surface surrounding the gate, each of the portions defines a portion of the external surface of the mold cavity.

11. The injection mold assembly of Claim 10, wherein the core member has a proximal and a distal end, and the core holder is concentric about the proximal end of the core member.

12. The injection mold assembly of Claim 10, wherein the core member defines the internal surface of the mold cavity.

13. The injection mold assembly of Claim 10, wherein the core member comprises an upper core portion and a base end portion, the base end portion having a substantially hemispherical portion with a greater rate of heat transfer than the upper core portion.

14. The injection mold assembly of Claim 13, wherein the upper core portion and the base end portion form the internal surface of the mold cavity, and wherein the core member has a greater rate of heat transfer than the upper hardened portion of the cavity section.

15. The injection mold assembly of Claim 10 **[[9]],** further comprising the core section having a core hardened portion comprising a hardened material, and a parting line disposed between the upper hardened portion of the cavity section and the core hardened portion.

16. The injection mold assembly of Claim 15, wherein the upper hardened portion defines a threaded portion of the external surface, and the cavity section further comprises:

a hardened main cavity portion formed of a hardened material and defines a portion of the external surface and is between the upper hardened portion and the gate portion of the cavity section; and

a high heat transfer cavity portion having a lower rate of heat transfer than the gate portion and is between the upper hardened portion and the gate portion of the cavity section.

17. The injection mold assembly of Claim 16, wherein the hardened main cavity portion is adjacent to the upper hardened portion of the cavity section, and the high heat transfer cavity portion is adjacent to the gate portion of the cavity section.

18. The injection mold assembly of Claim 17, wherein the hardened main cavity portion is adjacent to the high heat transfer cavity portion.

19. The injection mold assembly of Claim 16, wherein the hardened main cavity portion is formed of a hardened material while the high heat transfer cavity portion is formed of a high heat transfer material.

20. The injection mold assembly of Claim 16, wherein the high heat transfer cavity portion defines more of the external surface than the hardened cavity section.

21. The injection mold assembly of Claim 16, wherein the core member has a portion with a substantially uniform cross section along its longitudinal axis, and the mold cavity has a substantially uniform cross section between the portion of core section with a substantially uniform cross section and the high heat transfer cavity portion.

22. A preform mold assembly, comprising:

a core section having a core contact surface formed of a hardened material; and

a cavity section comprising an upper portion and a lower portion, the upper portion comprising a hardened material and having an upper contact surface configured to mate and contact the core contact surface, and the lower portion comprising a high heat transfer material.

23. The preform mold assembly of Claim 22, further comprising a preform mold cavity when the core contact surface contacts the upper contact surface of the upper contact surface, the preform mold cavity having a longitudinal axis and the lower portion surrounds more of the longitudinal axis of the preform mold cavity than the upper portion.

24. The preform mold assembly of Claim 22, wherein the core section comprises a core having a distal end formed of a high heat transfer material.

25. A method of forming a preform, comprising:

providing a core section having a core contact surface formed of a hardened material;

providing a cavity section comprising an upper portion and a lower portion, the upper portion comprising a hardened material and having an upper contact surface configured to mate and contact the core contact surface, and the lower portion comprising a high heat transfer material;

providing a mold cavity between the core section and the cavity section; and

injecting a moldable material into the mold cavity.

26. A preform formed by the process comprising:

providing a cavity section having a first portion and a second portion, the first portion comprising a hardened material that defines a cavity contact surface, the second portion comprising a high heat transfer material and defining a cavity mold surface;

providing a core section having a core contact surface and a core mold surface, a portion of the core section forming the core contact surface comprising a hardened material; and

providing a mold cavity having a distal end and a proximal end and formed by the cavity mold surface and the core mold surface when a portion of the cavity contact

surface and a portion of the core contact surface are in contact, the distal end of the mold cavity formed by the second portion of the cavity section.

27. An injection mold assembly, comprising:

a lower portion;

an upper portion;

a mold cavity having a distal end and a proximal end;

means for mating the lower portion and the upper portion;

means for transferring heat at a first rate from the distal end of the mold cavity and a second rate from the proximal end of the mold cavity;

means of inhibiting wear of the injection mold assembly when the lower portion and the upper portion mate.

28. The injection mold assembly of Claim 27, wherein the first rate is greater than the second rate of transferring heat, and the lower portion is a cavity section and the upper portion is a core section.

29. A mold insert, comprising:

an upper portion comprising a wear resistant material adapted to contact and mate with a core section;

a lower portion adapted to connect with a cavity section comprising a high heat transfer material and defining a cavity mold surface.